THE VETERINARY RECORD

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Edited by WILLIAM HUNTING, F.R.C.V.S.

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PUBLIC HEALTH CONGRESSES.

Our correspondent "Socrates" draws general attention to a weak spot which was specially referred to by Professor Craig in his report on the recent Congress at Cork. Our own experience of these congr esses is rather extensive, and we find some of them well attended by veterinarians, some badly. All are not well arranged, many have been most successful and instructive. One need not be much surprised if the Cork Congress did not quite please the most strenuous scientists. But it should be remembered that it was held close to some of the loveliest scenery in the world and that few delegates would be able to resist taking advantage of the occasion.

It is a fact that the social functions may interfere with business and the veterinary section possibly suffers more than others. After all, we cannot claim the most prominent position at a Health Congress and so we usually get a day towards the end of the week. It might be worse if we were fixed for an earlier day, as then in another room or another building might be held, synchronously with our meeting, an assembly discussing some important subject of State medicine, and the Veterinary Section would be left—even by some of its own members.

One difficulty is inevitable. These Congresses are held at different centres every year. Local men must make the arrangements, and they go to their work without experience. There is one more cause of failure and this is preventable; it is the delay of Societies in appointing delegates. Every year circulars are sent out early enough, but the rule at Veterinary Societies is for some man to get up and propose that "it be considered at the next meeting" —probably three months ahead and only a month before the Congress.

When every allowance is made for difficulties and mistakes there is still another cause which militates against a successful section. As a rule no veterinary surgeon takes the trouble to attend unless he is sent as a delegate. Now the Congress is open to all and the subscription is small. Men from a great distance have a valid excuse for non-attendance, but the local residents would do good to themselves and their profession by putting in an appearance. Even if they gained no information they would help to fill the room, and so let medical men and local sanitary authorities see that public health has attractions for veterinary surgeons, and that our continual shouting about our rights and special fitness is not merely an insistent claim for paid appointments. We have to "capture" these places, and we have to demonstrate our fitness before the local authorities who control the appointment of health officers.

FRACTURE OF OS PEDIS.

Subject.—A heavy van mare, about fifteen years old, having an unmistakable, though not very large, sidebone on the outer side of the off hind limb. The sidebone was of old standing, and did not cause lameness.

I was asked to see this animal, the history—rather a vague one—being that she had been very lame on that limb for a couple of days. I found her evidently in great pain, the foot hot, and the coronary region on the outer side very tender, and so much swollen that the sidebone, which I had previously examined, could not now be accurately distinguished. The temperature was high, and the foot held up in a manner that led me to suspect the presence of pus within the hoof.

I accordingly had the shoe off, and the foot searched, but with no result. I then applied poultices and hot fomentation, both containing disinfectants, and gave febrifuges internally.

Under this treatment the animal grew worse, both the local and the constitutional symptoms becoming aggravated. Two days after first seeing the case, however, the coronary swelling, which had meanwhile increased in volume, began to fluctuate slightly. I therefore incised it, and removed a quantity of pus mixed with some blood.

The next day, however, not the slightest improvement was visible, and the mare died on the day following—four days after commencing treatment.

The post-mortem examination revealed a fracture of the wing of the os pedis below its junction with the ossified lateral cartilage. There was also acute inflammation of the coffin joint, though it appeared to have suffered no mechanical injury from the fractured bone.

Remarks.—Death in this case was probably due to absorption of septic material from the seat of injury. The injury itself is not quite easy to account for, as the history was uncertain, but it appears to me very possible, to say the least of it, that it was caused by a blow *on the sidebone*. That hypothesis induces me to record the case as suggestive of a danger not universally recognised in connection with ossified lateral cartilages.

V. S.

INTERNAL HÆMORRHAGE—DISEASED KIDNEYS.

Horse B 86, 1st Royal Dragoons, admitted to hospital 10 a.m. 7th September, reported sick with colic. Horse a known wind-sucker and always poor in condition. Previous sickness practically *nil.*

On the evening 6th September horse walked to water troughs, subsequently eating a good feed. Animal apparently healthy.

Very early 7th instant (6 a.m.) the animal was seen in the lines dripping with sweat and looking generally below par, so was taken into the open air and dried. Sweating very freely at this time of the year is not considered to be very much out of the common, so animal was put back into stables. Here it continued to sweat and show signs of uneasiness and then was sent sick.

When seen by me at 10 a.m. animal showed no signs of colic but was ordered ʒss. ammon. carb. in ball and to remain in the shade for an hour. When the ball was given the horse staggered, fell forward on nose and knees, and found great difficulty in getting up. I imagined that the ball had stuck in the pharynx—so it had, but not long enough to give rise to this disturbance.

Put horse in loose-box, temperature was 103°F., pulse 60, regular but small. Respirations very little disturbed. Had two motions within the first hour and passed about one pint of apparently normal urine. At least it was not tinged with blood. The mucous membrane were very blanched, and the extremities rather cold. The animal sweated freely and continued to do so all day, yet quickly dried when taken outside and rubbed for a little. Animal continually extending neck, curling up upper lip and inhaling deeply. I failed to diagnose the case beyond a hazy idea that it must be hæmorrhage.

There was no change all day. Animal lay down quietly for a couple of hours during the day, and eventually died 5.30 p.m. without a struggle.

Post mortem.—The whole, or almost the whole, of the body blood lay in the peritoneal cavity, and all tissues were blanched. The liver smaller than normal, slightly indurated. The spleen which I expected to see ruptured (a common thing amongst natives here) was normal in consistency but weighed 6lb.

The right kidney. The whole of the tissue of this organ lay in the capsule like so much melted fat. It was pale yellow in colour and greasy to the touch, there was no normal kidney substance.

The left kidney was practically the same except for an area on its inferior surface about the size of a five shilling piece, which was of a deep claret colour and showed two irregular rents, each about half-inch long. Other organs apparently normal.

As such a condition of the kidneys must have taken sometime to develop, it is rather remarkable the animal had not shown some previous symptoms.

C. E. Steel, Lieut. A.V.C.

Lucknow, Sept. 21st.

THE SPREAD OF ANTHRAX IN ANIMALS AND MAN.*

By John Dunstan, M.R.C.V.S., F.R.S.Edin.

One of the chief reasons of the importance of anthrax is its communicability to man, the actual pecuniary loss from deaths of animals not being great in this country in comparison with other contagious diseases of animals. This loss, however, though small, is increasing almost regularly every year owing to more frequent occurrence of the disease. The Board of Agriculture statistics tell us that the average yearly deaths from anthrax in animals for the years 1887-8-9 were 194, and for the years 1903-4-5 924, *i.e.* nearly 4½ times as many cases occurred during the last three years. Not too much reliance should be placed on statistics, however, for various reasons, among them the following:—

1. Unwillingness of the Local Authority to report an account of the expense incurred in disposal of carcases. This condition of affairs exists both in England and Scotland.

2. Landowners frequently object to their tenants reporting cases of anthrax, as the value of a farm on which anthrax is known is thereby depreciated. Small landowners farming their own land frequently do not report for similar reasons.

3. Stock breeders and feeders often do not report for the reason that buyers are shy of buying from a farm on which anthrax has recently occurred.

4. Dairy farmers object from fear of being temporarily prohibited from selling milk.

5. The occasional occurrence of atypical cases in which the disease is not suspected.

6. Cases are no doubt occasionally returned as anthrax which are not really so, owing to the difficulty of diagnosis when some considerable time has elapsed between death and examination.

Anthrax in Man is generally the result of infection from an infected animal or some part of its body or appendages, but it is necessary to recognise the possible saprophytic behaviour of the bacillus, and that it may be conveyed by soil, water, flies, vermin, dust etc. Man possesses a greater degree of resistance than most of the domesticated animals and in him the disease runs a longer course. There are three chief methods of infection; by inhalation, ingestion, and inoculation. Perhaps errors in diagnosis are quite as frequently made in man as in animals, even if not more so, errors being particularly likely to occur in ingestion cases, especially in districts where the disease is infrequent.

Infection by Inhalation is popularly known as wool sorters or rag pickers disease. These cases are not so frequent as formerly owing to improved methods of dealing with wools etc.

The condition is not easy of diagnosis unless the history points to the possibility of anthrax, for this reason diagnosis is occasionally made too late. Dr. Bell, of Bradford, says:—"Even when examined

* A paper read before the Veterinary Section of the Sanitary Congress at Bristol, 1906.

with great care diagnosis is frequently extremely difficult and nigh impossible before the heart fails and collapse threatens. In ordinary cases where the patient survives from three to five days, the symptoms for the first few days are so slight and so closely resemble those of ordinary catarrh that I do not know how a correct diagnosis can be made." In other cases heart failure is manifest at the commencement and diagnosis easy. The characteristic symptoms are: Difficulty of breathing, cough, cyanosis, sense of constriction of the chest, respirations 30-40, pulse 120-180, temperature 104-106°F., frothy bloody expectorate containing bacilli, and death usually in from 24 to 48 hours.

Infection by Inoculation.—The lesion which results from infection by this method is popularly known as malignant pustule. There is no danger of inoculation if the skin be sound, but even a pin or thistle prick is sufficient to afford entry to the bacilli. An itching pimple with a dark centre and lighter areola first appears, the dark centre is soon covered by a small vesicle, the contents of which are at first clear but later bloody. The vesicle dries up in one or two days and becomes firm and hard, and suggests gangrene. The swelling extends for ½ to ¾in. and a row of new vesicles appear, which are followed by a necrotic slough, the lesion gradually extending in this manner. The necrotic part remains firmly adherent to the subjacent tissues until suppuration, which takes place in favourable cases, ensues. In addition to these local manifestations fever, with its accompanying symptoms, is always present.

Anthrax Œdema may result from direct inoculation, or in the course of internal anthrax a flat swelling occurs which extends rapidly, with a yellowish or reddish discolouration. It tends to speedy general infection.

Ingestion—Intestinal anthrax. The history of ingestion of anthrax products assists diagnosis, possibly for some days there may be indications of local bowel lesions, chills, fever, nausea etc. Suddenly the following occur, vomiting, bloody diarrhœa, anxiety, debility, cyanosis, and may be petechiæ, convulsive nervous symptoms and collapse. The bacilli are not always found in the circulating blood, but always in the sanguinary excretions.

Dr. Legge, H.M. Medical Factory Inspector, states that in this country during the five years 1899-1903, 211 cases of anthrax in human beings were reported, and that the death rate was 26 per cent. The seats of infection were as follows:—Internal 5, neck 84, face and head 77, forearm 16, elsewhere 28, fingers 1. The pustule was excised in 143 cases, and the greatest death rate occurred in those cases in which the primary lesion was situated on the neck, face, and head, 72 of the infected persons were wool workers, 56 of these working on wools classed as dangerous, 58 were workers in horse hair, and 69 workers in hides and skins. Among the operatives working on wools scheduled as dangerous 1·3 per cent. were infected, and on dangerous hair 1·5 per cent.; 34 per cent. of reported cases occurred amongst workers in Persian wools, 22 per cent. Turkish and mohair, 28 per cent. Chinese horse hair, 21 per cent. East Indian.

Recovery may in the majority of cases of human anthrax be confidently looked forward to if treatment be adopted in time. Sclavo's serum is now used largely and with excellent results.

Dr. Legge, in his Milroy lectures, says "Many cases of cutaneous anthrax recover spontaneously, more recover after excision, and still more if in addition to excision Sclavo's serum be used.

The serum should be used in all cases of internal anthrax and in all cases where persons exposed to possible infection are taken ill, unless anthrax can be positively excluded. 40 c.c. of the serum should be given, and repeated if necessary.

Notification of Anthrax.—The law directs that all cases of anthrax in animals shall be reported, but not so anthrax in man. Under the Factory and Workshops Act, 1901, all cases of "industrial" anthrax have to be notified. This is not as it should be, *all* cases should be reported. Numerous cases are on record where factory workers have conveyed the disease to friends and relatives by means of their clothes, etc. If a wool or skin worker contracts anthrax it is notifiable, if however a member of his or her family becomes infected through his clothes it is not notifiable. A carter may convey infected wool or hides to a factory and contract anthrax from handling the goods, this case is however not notifiable, and the wool or hides go unsuspected to probably infect others, and the vehicle perhaps to convey grain or other food materials. Neither the Home Office nor the Local Authority has power to deal either with cargo or wagon. The Home Office is now issuing to all establishments dealing in raw goods an illustrated placard prepared by Dr Legge. On the top are three pictures depicting a malignant pustule, (*a*) 1 or 2 days; (*b*) 3 or 4 days; (*c*) later development. Below is a clear description of the disease, symptoms, causes, means of avoiding and treatment.

Disinfection.—This in the case of animal products is by no means an easy matter. It is not practicable by means of chemicals, and heat sufficient to destroy the bacilli is only applicable in the case of horse hair. The hair is subjected to a current of steam between 200° F. and 225° F. at 2 to 2½lbs. pressure. In the case of other materials close fitting washable dresses with gloves, veils, and respirators are useful, as indicated in the particular methods and appliances for the prevention of dust, and manipulation as far as possible of materials in a wet condition, are about all that can be done.

This brings us now to a consideration of what might be done to lessen the frequency of anthrax both in man and animals.

First, then, we would say compulsory notification of all cases of anthrax in man. All cases in animals are reported, or at least are supposed to be reported, There is a wide-spread popular idea that anthrax only affects cattle, it is probable, however, that many animals of other species die of it, the cause of death being unsuspected.

Then some special means of dealing with those

animal products which may be classed as dangerous should be compulsory. All cases of sudden death in animals should be reported unless it is quite certain that anthrax is not the cause of death. All suspected cases should be reported directly to the Veterinary Inspector by telegraph. I have known numerous cases where an animal has been found dead early in the morning and the farmer has re-reported to the village constable fairly promptly, the latter then gets into his uniform and starts off to walk to the nearest "Police Inspector" who may perhaps live six to eight miles away, and this in spite of the fact that there is a telegraph office in the village (if he sends a telegram he must do it at his own expense.) The Police Inspector then either reports to his Superintendent or the Veterinary Inspector, so that by the time the latter receives his notification evening has often arrived, and with it, in winter, darkness, which makes it impossible to dispose of the carcase on the day of death.

This importance of immediate reporting I would lay special stress on, both on account of the much greater care of diagnosis and of the great danger of leaving a carcase undisposed of longer than is absolutely necessary. It is a wise proceeding of a veterinary inspector to take a field microscope with him when going to a suspected case; if he does this, and also uses the simple stain recommended by Sir John M'Fadyean, much valuable time will be saved and there will be less risk of error in diagnosis, and risk of spread of the disease by birds, flies, vermin, and dogs will be considerably minimised. The Veterinary Inspector occasionally meets with a case in which the animal has been dead for some time. I myself met with a case a short time ago in which death had occurred three or four, probably four, days previously.

In these cases, especially in summer, putrefac tive bacilli may swarm in the blood to such an extent and those of anthrax have partially or wholly disappeared or refuse to stain, that diagnosis is extremely difficult even in the hands of an expert. In these cases the carcase should be dealt with as if death were certainly due to anthrax, in fact *the Anthrax Order of 1899* provides for the immediate disposal of such carcases as if certainly dead of anthrax. There is reason to believe that animals dead of anthrax are frequently sent to knackeries and that the flesh is consigned to London as "cat's meat" either partially cooked or raw: some means should be taken to prevent the possibility of this, as the vans in which such meat is conveyed may infect other goods, apart from the infective nature of the material itself. With regard to the disposal of carcases I have carefully studied the method of Major Bostock, now advised by the Board of Agriculture, and can speak of it in terms of unqualified approval, having now watched the destruction of several carcases. No attention is required after the fire has been set alight, everything is consumed and there is not the slightest possibility of any infection remaining, and it is not expensive, the cost being very little more than that of burial.

ROYAL (DICK) VETERINARY COLLEGE.

The eighty-fourth session of the Royal (Dick) Veterinary College was opened on Wednesday afternoon last. Sir William Turner, K.C.B., LL.D., Principal of Edinburgh University, occupied the chair, and there was a large attendance, including the Professoriate of the College, members of the Town Council, leading members of the veterinary profession in Edinburgh and district, representatives of the agricultural interest, and a large body of students and their friends.

The Chairman said that since he took part in the opening of the College at the last winter session a very important change had taken place in its constitution. This College was founded a great many years ago by the late Professor William Dick—(applause)—and on his death he formed a Trust, and he constituted the Lord Provost, Magistrates, and Council of the city his trustees, and from that time onwards the Lord Provost, Magistrates, and Council had been the trustees and the administrators of the funds and the administrators of the affairs of the College, but some three or four years ago it was thought by some influential members of the Town Council that it probably would be to the advantage of the College if the administrative body were thrown more open—that is to say, if the members of the Board of Administration were drawn from other quarters than members of the municipality, and negotiations were entered into with the University, and with other public bodies in Edinburgh, with the view of ascertaining if some arrangement of a practical kind could not be made. Very fortunately, at the time when these negotiations began, material help was given by the munificence of his friend Mr. MacCallum, who intimated his willingness to give a considerable sum of money—many thousands of pounds—with the view of providing an endowment for a certain branch or branches of teaching. Well, as time went on it became obvious that in order that this new Board should obtain the proper authority to carry on the business of the College, an Act of Parliament, or, what was equivalent to an Act of Parliament, a Provisional Order, should be obtained, and this had been done. The Act received the Royal assent in the month of August this year, and now they were met under a new dispensation. The Town Council was no longer the administrative body. The funds of the College had been transferred to a representative Board, and this Board was extremely interesting from this point of view, that whilst the Town Council elected certain members, keeping up the old historical association, educational bodies and the veterinary profession itself sent members to the Board, and naturally Mr. MacCallum was a life member of it. (Applause). He thought they would recognise that this Board was on a wide and comprehensive basis as regards its membership, and he trusted that under its management veterinary education in Scotland would greatly thrive, and that this College would retain its place as a veterinary College of high standing. (Applause.) In the Provisional Order, which had now become an Act of Parliament, it was definitely stated that all the property was vested now in this Board, and what he thought would be interesting to many of them was that in the first section appertaining to this College the title of the "Royal" Veterinary College was ensured to them by the authority of Parliament. (Applause.)

ADDRESS BY MR. JOHN MALCOLM, F.R.C.V.S., F.H.A.S.,

Sir William Turner, Ladies and Gentlemen,—My first duty is to express my pride and pleasure at being invited to be here to-day. When I received from Principal Dewar the invitation of the College Board of

Management I was very dubious about my ability to comply. Previously arranged business and holiday engagements combined to intervene so awkwardly that my wonder now is to find myself here; but a feeling of justifiable gratification at the request, a deep sense of everlasting indebtedness to my Alma Mater with the incumbent obligation to honour her behests where possible, and the inalienable desire to serve her in any capacity in my power, settled the question. Now that I am here I feel much which I cannot express. Remember I am no teacher, no Councilman, no practised speaker, simply a Municipal Veterinary Officer, whose lines have fallen in not unpleasant places, and whose ambition is practically consummated in the endeavour to fulfil efficiently the duties of a somewhat humble though not unonerous post. The sole claim left to me to advance in justification of my presence here to-day is that I am a Scotsman, cradled in the veterinary sense at Clyde Street School, of which venerated Institution I am proud to be an alumnus. It will be within the knowledge of many of you that at these time honoured gatherings students always expect to receive good advice, and as a rule they get it. Other things may change but no appreciable change is recognised in that. As it is to-day so it was 30 years ago. We expected good advice then and we were not disappointed, but it is no secret that we did not always take it. Present day students assure me that in this latter respect at least they are not only the type but the true offspring of their forebears. A saying of Carlyle's, so pertinent to the present occasion and so clearly recording the sage's conviction of the futility of giving advice that would not be acted upon, may be recalled. His actual words—"That advice that is not to be translated into action is just as well suppressed"—embodies such an obvious truth expressed in so apt and lucid terms as to warrant its inscription among our treasured maxims. Assuming that you will agree in the verity and wisdom of his dictum, I may further assume that you will approve as wise discretion on my part, my resolution to confine any counsel I may feel constrained to offer within the strictest limits.

It may be taken for granted that all who have come here to pursue their studies will have passed the required preliminary examination, and may now be congratulated on possessing an educational hall mark equal to that necessary for matriculation by students in the medical and other learned professions. Present satisfaction at the standard now established tends to efface the recollection of former impatience at the delay prior to its realisation. Within our experience the test of preliminary preparation was little other than a matter of form, any candidate's relegation to further study being unknown; therefore notwithstanding delay it is evident that the pace of progress has been on the whole comparatively rapid. This is aptly illustrated in the words of your principal, who the other day in addressing an Edinburgh meeting of veterinarians said—"While other professions have been raising their educational tests, that of the veterinary profession has been raised much faster, until it has overhauled and is now on a level with that of the medical profession." Some few there are who still question the utility of this standard of training on the ground that there is no reward within our gates to adequately repay it. In the pecuniary sense there may be some justification for their contention; in the scientific sense there is none. If any one here is taking up the study of veterinary science solely or mainly from its fancied financial prospects he will do well to pause, and count the cost before proceeding further, for the odds are heavy against any ambitious pecuniary expectations ever being realised therefrom. Until recently, it is not improbable that a section of the outside public over estimated a veterinarian's prospects; now the motor car bogey has dispelled any illusion, and the present tendency is to go to the other extreme. As a consequence the fiduciary aspect of our calling is heavily depreciated—a fact to which the reduction that has taken place in the annual entrants to the profession bears eloquent testimony. I must confess that until quite recently I had not fully realised the extent of this falling off or its inevitable effect on the schools; but the facts are incontrovertible—the average annual addition during the last five years from all the schools was only 77 whereas during the three preceding quinquenial periods it was 98 and 148 and 122 respectively. The only crumb of consolation apparent for the schools is that the recent returns present no indication of any further reduction, though for the members there may be some satisfaction in the ensuing prospect of lessened competition. Apart from this there is some gratification in knowing that the reduction has mainly been in, what may termed the outside recruits; the sons and relatives of veterinarians continue to join our ranks in practically undiminished numbers. Here at least is a hopeful portent, and the manifest faith of men with inside knowledge should encourage external students to take a more confident view of the future possibilities of their chosen calling.

Whether the veterinary proclivities of you students are hereditary or acquired, the fact that you are here under present circumstances is fair evidence of your conviction that in the veterinary profession you will find your natural vocation. Having counted the cost you face the issue and on the whole may do so with every confidence. Granted the natural predilection, I for one, after a fair measure of experience, agree with you in thinking a veterinarian's life a not undesirable one. At any rate I can honestly say I know of no other calling in which personally I would have equal happiness and pleasure in the every day performance of my work.

The past history of Clyde St. School, as of the veterinary profession generally, has been so frequently and well recorded as to render any further attempt at historical review for the time being superfluous. I have therefore to look elsewhere for my theme of address, and in the current transitional state of things I naturally turn to collegiate instruction and professional prospects as subjects likely to possess the requisite interest. Even at the risk of being tedious, I cannot omit a passing reference to the many changes that have taken place in matters veterinary since, 30 years ago next Friday, a chance incident first guided my steps to Edinburgh and casually to Clyde Street; nor can I entirely suppress here the vivid intervening memories of those busy bygone delightful days spent at the fountain of veterinary knowledge in this ever beautiful city, which to its general fascination possesses for me an abiding attraction from the lifelong friendships and attachments formed there, and among which I am proud to reckon that of your late Principal, pre-eminently the student's friend, Professor Walley, and that of your present able Principal, Professor Dewar. The old College has been remodelled and rebuilt and the whole staff changed, but their indelible impress survives. Need I remind you that among her alumni to-day, are enumerated the Government Chief Civil Veterinary Officer, the Principals of four out of the five Veterinary Schools in Great Britain, and many other distinguished men; or that one of these Principals, for years a distinguished teacher in Clyde Street, has most deservedly been honoured in an unprecedented degree by a threefold recognition—by His Majesty for services to the State, by veterinary *confrères* for untiring and exceptionally brilliant services to his profession, and now, last week, by Aberdeen University for original contributions to veterinary science and literature. I am sure past and present Clyde St. students, one and all, join in heartily congratulating Sir John M'Fadyean, our most distinguished fellow alumnus, on his richly merited and unique distinction. Clearly

present day Clyde Street students have a high standard to maintain, but Edinburgh students must have profoundly changed if they fail to give a good account of themselves in the future as in the past.

The Dick College buildings as we are reminded in the current prospectus are now "on a level with the State aided veterinary institutions of foreign countries," and the professorial body such that "the strength of the teaching staff is not excelled by that of any other veterinary school in the country," and as you, the Clyde Street veterinary students of to-day, are presumably the equal at least of those of former times, the reputation of our Alma Mater may safely be left in your hands.

A moment ago I referred to the changes observed in veterinary matters since I had the privilege of studying here. One of the most evident and striking is the difference in length of the period of study. Then two winters and one summer sufficed, now four years are essential; and students aspiring to a University degree are being recommended to take five years. This foreshadowing already of a future addition to the present period of study is perhaps even more apparent in the regular course now followed by the majority of the best men in supplementing their ante-graduate training by a post-graduate course in practical veterinary pathology and bacteriology. Indeed so important has this post-graduate qualification already become that candidates for Government, Public Health, Colonial, and Indian appointments are as a rule passed over in the selection if they do not possess it. I am not aware whether any provision has been made for holding a post-graduate course in practical bacteriology here, but in view of the now generally recognised necessity of a special knowledge of practical veterinary bacteriological microscopy, particularly by candidates for home and colonial public appointments, and therefore by many Clyde Street men, the question of inaugurating a course has no doubt received due attention from the Board of Management.

Turning however from the post-graduate course and the length of the period of instruction to the consideration of the ordinary College curriculum, it may be said broadly speaking, that the present curriculum has met with general approval, although it has some acknowledged minor defects. Hitherto any amendment of these has been discountenanced but now the Council may fairly be asked to consider how best to amend them. In deliberating this the experience not only of teachers and examiners but of recent gnaduates and present students should be received. With respect to the first year's subjects of study I understand there is a very general consensus of opinion among students, that these are defective is not including any subject of immediate practical interest to lovers of animals, and that partly as a consequence of this omission many of the students find this the most tedious and trying year of the course. This omission is a real defect and it should be remedied. This would be easy enough were it not that the first year's course is already felt to be a heavy one, and as all its subjects are essential and in their natural position it cannot conveniently be lightened. Notwithstanding this I am of opinion that stable management could be included among the first year's subjects with marked benefit. It is in reality an easy practical subject, involving little or no mental strain. Coming at this early period it would give the student the needful direct interest in live stock from the beginning, and it could be undertaken in a way that would provide him with a change of work more in the nature of a pastime than a study, affording him thereby a highly necessary and welcome relief to the more difficult scientific subjects. In the second year's subjects I would suggest the substitution of zootechny in place of stable management, at least so far as it includes the study of equine form and mechanical aptitude, and a study of the various breeds of domestic animals. The wonder to me is why this has not yet been included in the curriculum. Its practical utility cannot be questioned, and moreover, no other subject goes so well with anatomy and physiology. Although ordinary horse shoeing is conveniently placed, coming in its natural position in the second year, surgical shoeing should be transferred to its proper place in the fourth year's surgical section. According to the recent discussion the present teaching and examination in horse shoeing is mainly theoretical and non-practical, but clearly a measure of practical work is required. In the third year's course regional and surgical anatomy should be added. This would bridge the present undue interval between anatomical and surgical study and fill an essential but now vacant part in anatomical instruction. In this year also a commencement should be made with the systematic study of elementary medicine and surgery and generally in the routine details of practical work. The chief defect of the fourth year's instruction in most veterinary institutions is the lack of general clinical work Mr. MacCallum, in his admirable address last year, told you that it was the ambition of the Board of Management to provide a veterinary training for Clyde Street students second to none in Europe, and he pointed out that to secure this it was necessary that increased facilities for practical work, particularly in obstetrics and in other directions, should be provided. A determined effort should be made to comply with this suggestion, and should it be desirable to take a farm or even to transfer the entire College to a more suitable site elsewhere it is to be hoped that any financial or other difficulty in the way may speedily be removed. Mr. MacCallum's munificent benefaction has already done so much, in its time of special stress, for what is essentially a public national institution that Government may now well be approached for any further outlay necessary. Not only do University and other educational bodies in need receive Government help, but the grants to the Dublin and London Veterinary Colleges provide specific precedent, if that be necessary, for extending similar treatment to the Edinburgh Veterinary College. Surely Scotland alone is not to be ostracised by Government in the matter of veterinary State aid. With a Scottish Prime Minister, a Scottish member as Chancellor of the Exchequer, and English and Irish precedents, there ought to be no insurmountable difficulty in obtaining for Edinburgh Veterinary School some equitable measure of assistance similar to that given to London or to Dublin. Yet it is not improbable that the existence of other two unaided schools may be used as an argument against any such grant on the plea that Government help to Clyde Street would unfairly handicap these schools—but any force in this argument was entirely removed by the London and Dublin grants.

Of course it would simplify matters and remove any sense of unfairness if all schools were aided, but to ask Government to endow five schools to educate an annual aggregate of 80 new members, or an average of 16 per school (or apart from London an average of 10 per school) would be no small order. Indeed in the light of these numbers it seems clear that we are rather over schooled. Three schools, one in England, Scotland, and Ireland respectively, appears sufficient for all our requirements, and moreover the three could be better equipped, better staffed, and would be far more likely to receive requisite State aid than five schools. However the five schools exist and are likely to continue. Two of these we have already seen receive direct Government aid; the Glasgow school being a private proprietary institution is ineligible for aid, Liverpool receives no direct aid though it may be indirectly benefitted by the University general Education Grant, if it is that is another point in your favour, but even if it is not that is no reason for not putting Edinburgh School

on a par with London and Dublin Schools, nor for refusing to Scotland Government veterinary educational help equivalent to that given to England and to Ireland.

In connection with Clyde Street's requirements I have already recalled to you Mr. MacCallum's very strong plea for the provision of greater practical facilities, and I now venture to submit that most of our veterinary schools have another requirement almost equally pressing, viz., the provision of adequate specialist professorial staffs solely devoted to the duties of their office and unhampered by undue duplication of functions. It is only thus that the members of a staff can have requisite time to keep themselves in touch with what is being done and thought elsewhere, or to undertake the original work necessary if they are to have their due part in advancing our knowledge. However much good work they themselves may have done those teachers who have been overweighted by duplicate professional functions, or have been without the trained veterinary experience necessary, will be the very first to appreciate the necessity for such a needful reform. Of course the difficulty here, as in many other reforms, is finance, and I must confess that I cannot see how it is to be overcome unless by Government help or by the intervention of generous private benefactors, for it is quite clear that the students fees alone will never secure it. If all our schools were manned by staffs of trained specialists, and each member devoted his energies specifically to the advancement of the veterinary side of his subject, the schools would not only maintain their position as teaching institutions for veterinary students but could with justice keep their right place in the educational world as institutions taking a regulated specific part in the endeavour to advance definite knowledge.

Before leaving the subject of collegiate training there is just one other point that I wish to refer to, and that is the present want of uniformity in the scholastic terms. To any ordinary member with little inside knowledge it seems more than curious that two institutions here should be unable to agree with three institutions there respecting the sessional terms best suited to educational requirements. This lack of uniformity in the sessional term gives rise to a corresponding lack of uniformity in the various professional examinations. One effect of this is to add to the already heavy cost of the R.C.V.S. Another is to increase the inconvenience of examiners, which as a consequence tends to limit the list of available suitable men. As nowadays most if not all others educational bodies manage to agree upon common ground as to the terms most suitable, surely it is not too much to expect similar business like action from our teaching schools.

Some discussion, as many of you probably know, has recently taken place in influential quarters respecting the examinations. The existing arrangement, the one portal system with examination by non-teaching examiners has been in force over a quarter of a century. No member now appears to doubt the benefit of having only one port of entrance, and the present discussion has chiefly been whether the Examining Board should be broadened by adding the teachers. Examinations are admittedly a very imperfect way of accurately ascertaining students qualifications. Yet as apparently no better system can be devised it is desirable that they should be carried out in the most approved way and adventitiously helped in every legitimate available manner. Probably it was with this in view that the R.C.V.S. in addition to fixing the number of lectures has recently, commendably we think, prescribed the minimum number of hours of practical instruction in each subject prior to the examination. Having gone so far, they are now invited to go a step further and supplement the external examiners by adding in each case the student's teachers, or, as an alternative to utilise in doubtful cases the student's class records of attendance and work. The obvious objections to this latter seem sufficient to render the suggestion untenable, and moreover, some students such as now pass might have marked cause for dissatisfaction. With respect to the introduction of teacher examiners, the precedent of prevalent internal University examinations has been put forward in support of the change, but the chief reason advanced in its favour is that under the present system "good and efficient students" are constantly being stopped. So far as University precedent is concerned the analogy, I understand, fails in that the internal examinations of a University is for its own students and that, generally speaking, when external students are examined, as for example for the external degrees of the London University, the Examining Board is essentially external. To what extent good and efficient students fail under the present regulations I am not in a position to judge, but previous experience inclines me to the belief that, as a general rule, good all round students pass, and when a student regarded as efficient has been stopped he, although perhaps brilliant in some subjects, has generally had some one sided limitation which in some way has come markedly under the notice of the examiner, and thereby had perhaps a material, if not an undue influence in the rejection, particularly if the limitation had been evidenced in the practical work of the section. Be that as it may, it is very questionable whether, under existing conditions, it would be to the advantage of either students or teachers to have a mixed Board. We all admit unquestioningly the professional benefit of our one portal system. We further admit, in the interest of uniformity, the advantage there would be in having one examination centre, though in practice this seems unattainable, and as a compromise the next best plan has been adopted, viz., that of holding the examination at the several teaching centres under one Board. This under external examiners should provide essential uniformity, nevertheless I believe there is from time to time in one quarter or another a feeling that, despite every effort on the part of the examiners to be impartial, the influence of surroundings affects results. If that is so now how much more would it be so with teachers on the Board? In effect, assuming that each teacher examined only his own students, it would be liable to introduce, however unintentionally, many of the defects of a many portal system, and at the same time it would cast upon the teacher the onerous obligation of rejecting men of his own teaching—a disagreeable duty from which he is now saved. The only safeguard against this under a mixed Board would be that the teachers should form a joint section and assist in the examination of each others students, a plan which I venture to think would neither be agreeable to the teacher, nor in the interest of the student, nor beneficial to the pass list. All things considered, under our special circumstances the external Board, notwithstanding inherent imperfections, is immeasurably the best for all concerned. The present Board has been credited with being on the whole a very fair one, but if further improvement is necessary the way in which it most obviously lies is for the Council, guided as it is on examination matters by the schools, to take even still greater care in the future only to select the men most fitted for the purpose.

Within the last few years a movement has been in progress in various quarters with the view of inducing veterinarians to take a University degree in the belief that the possession of such a degree would enhance our position in public estimation. In support of the movement we are told that though many of our men are of University grade yet as they lack a University hall mark, they are not accorded the recognition its possession would give. No one more fully values the benefical effect of University training and surroundings than I

do, nor appreciate more the general and specific benefit that some of our candidates who aim at special positions would be likely to derive from a medical or science course with its valuable information on cognate subjects and additional training in scientific method; but valuable as these are and advantageous as a degree must be in aid of our progress, I believe, as I have indicated in speaking of college staffs, that even a more valuable and a more reliable way in which to promote our general professional advance is to entrust the teaching of our candidates only to scientific veterinarian specialists or in the more strictly science subjects to specialists having practical trained experience in their subjects. Although in a sense we are a branch of the medical profession, we are essentially specialists following a particular calling, and require not only a broad and general but a particular and specialised training in the various branches of study we pursue. On this special and practical veterinary training, even more than on the possession of a degree, the future of our profession depends. In the meantime, in response to the desire for a degree, a B.Sc. in Veterinary Science has been established by London University, and this is open not only to students from Camden Town, but to those from the other Veterinary Colleges. At present the University of Edinburgh is establishing the degrees of Bachelor of Veterinary Medicine and Surgery and Doctor of Veterinary Medicine and Surgery. The Batchelor degree course, according to the University Court Ordinance, appears to be on all fours with the M.R.C.V.S. course, save that it will not be necessary te pass all the subjects in the first and third divisions at one time, whereas under the R.C.V.S. regulations he must pass all at one time. So far as I can gather from the ordinance, candidates will not require to take any extra lectures (save perhaps a few on physics) or undergo any extra training for the University Batchelor degree other than is necessary for the R.C.V.S. diploma, and apparently the train- for the latter will suffice for the former. The new Batchelor Degree will afford candidates an opportunity of acquiring the desired University hall mark and for aspiring candidates may be relied upon to provide an additional incentive to study. The ordinance does not make it quite clear in what other way it is to advance our knowledge and teaching of veterinary science, but its promotors claim that the University course will really be more advanced and the examination more searching than the R.C.V.S. course and examination, and no doubt we shall have evidence of how they mean to pursue this in due time.

I am afraid I have employed all the time at my disposal in discussing prefessional training, and can only now refer to professional prospects in the fewest possible words. An idea prevails in many quarters that the veterinary profession has seen its best days, and that in the future, save possibly as public health auxiliaries, our services are likely to be little in demand. The most obvious way to guage the accuracy of this is to take stock, if I may so say, of the chief openings for members and try to see therefrom what evidence of decline or otherwise is presented. The openings, as you know are mainly of two kinds, viz., private practice and public appointments. The public appointments whether civil or military show no sign of decrease. Army appointments are as numerous as ever, and the Army Veterinary Service is now good, both socially and financially, and affords a fine opportunity for young graduates with military inclinations. The Veterinary Department of the Board of Agriculture has been markedly increased, and has on its permanent staff six times as many men as formerly and will probably further increase, though some of you may say that the Board's staff is more likely to decrease, seeing that contagious diseases have been largely stamped out. It is true that cattle plague, pleuro-pneumonia, foot-and-mouth disease, rabies, and possibly contagious lymphangitis have been for the time being stamped out, but there is no saying how soon our ports may be re-opened and the recurrence of any of these take place. However that may be, we have glanders, anthrax, and swine fever to be dealt with, besides a clear foreshadowing of the scheduling of swine erysipelas, contagious abortion, redwater, and possibly braxy; but above all, and more important than all, there remains tuberculosis. This is now so clearly recognised to be solely a contagious disease, is of so profound importance in public health, and though so insidious yet so drastic a bovine and porcine scourge, that public opinion will ere long compel Government to deal with it. At the present time it is simply played with. The destruction of a carcase here and the suspension of a dairy cow there, can have no real effect on its prevalence. Whenever it is tackled in earnest, it must be at its source—the farm—and that will be a big undertaking entailing among many other things an addition of the Board of Agriculture Veterinary Staff. In Municipal and other Local Authority appointments in public health or otherwise there has been a marked extension in the past, and as further regulations of the meat and milk trades will almost certainly demand an increase in trained expert inspectors, the extension in the future will in all likelihood be still more marked. Of the already wide and still increasing field in the Colonies there is evidence every day in the vacancies that are being advertised. As for India, the Indian Civil Veterinary appointments are also increasing, and as they are now reckoned among the chief professional prizes open to members competition for them grows keen. Recently when writing an old assistant and friend of mine, who was educated within these walls and is now on the Indian staff, I asked for some suggestion for this address. In reply he said "There is a great field for research work and for preventive medicine out here. There are great tracts of country without any professional aid at all." I should have liked to say much more on public appointments but time forbids.

Now in conclusion just a word on the motor and its effect on the private practitioner's work in town and country. In rural districts, notwithstanding all we hear, the motor has not yet displaced very many horses, whatever it may do in the future. The Board of Agriculture's statistics for 1905 show the number of agricultural horses in these Islands to be greater than at any former time, and although the partial return to hand for 1906 shows a slight reduction, in comparison with that for 1905, it excels any other former return, except, perhaps, that of 1895. Parenthetically I may here remark that as it is with horses so it is with cattle, only the increase in number is more marked, the latest return being the highest recorded, the number in Great Britain alone last year for the first time exceeding 7,000,000, and as it is with number so it is with prices both of horses and cattle—they were never higher. Though horses in agricultural districts have increased in the aggregate, there is unofficial evidence to show that light horses suitable for carriage and other harness work have actually diminished, the recorded increase being due to a marked increase in heavy horses. The decrease in light horses is probably in part due to motor substitution, and in part to breeders' erroneous anticipation of diminished demand, but is mainly due to the increased difficulty and risk in using young light horses on our motor dominated roads—many farmers on this account, notwithstanding current high prices, no longer deeming light horse breeding a desirable undertaking. In urban districts unfortunately no record of the number of horses has been kept, and therefore there are no reliable statistics for comparing the present, and the past, and we have to depend upon less certain data for our conclusions. The electric tram annihilated the

tram horse, and practically, save in London, the omnibus horse; and now the motor 'bus has challenged the London 'bus horse. The motor's greater speed attracts the multitude so anxious nowadays to save time, and in spite of its many defects the chances are it would win were it not for cost. The motor 'bus has to earn a profit—that is its *raison d'être*, but its capability of doing so seems very doubtful. At any rate the directors of two important public companies—the London General Omnibus Co. and the London Road Car Co.—who are among its chief users find it expedient to adopt the significant procedure, practically unknown in new successful undertakings, of suppressing the result in the face of a capital depreciation last year of 29 per cent. and 36 per cent. and a dividend reduction last half year of 25 per cent. and 37½ per cent. respectively. While the success or failure of the motor 'bus may still be in doubt, the failure of the ordinary industrial motor vehicle, for the time being at least, is practically settled As an illustration of this I may record that some months ago one of our largest municipalities made an exhaustive enquiry as to the relative pecuniary merits of horses and motors for light van work, and the result was an unhesitating decision in favour of the horse. Among others I was applied to for information, and in consequence of this I circularised every firm in Birmingham and district reported to be using motor vehicles industrially, and enquired their experience of the relative cost of horse and of motor traction. All, save the user of one van, who gave no data, replied that in their experience motor traction was much more expensive than horse traction; and where an accurate account had been kept the difference was very marked. The motor car being a pleasure vehicle of the well-to-do is in a different category to the industrial van. Here cost is not the governing factor; and fashion, pleasure, convenience, and the mechanician's bias have combined to secure rapidly a wide extension whose limit is not in sight. In London, from its power of minimising distance, and probably from the force of fashion, the motor has displaced a considerable number of carriage horses, but in urban provincial centres such as Birmingham the number displaced is far less appreciable. Probably this is partly explained by the fact that, in comparison with that of London, provincial urban social distance is shorter, and fashion less potent. However that may be, it is clear from the number of motors in use that the vast majority of motorists were not horse owners, and of the minority who were, only a few have ceased to keep horses though a number have reduced their studs. From the veterinarian's point of view there is a satisfaction in being able to set against this carriage horse displacement, an increase of almost, if not of quite, equal degree in cart and trade horses. The result is that apart from the displaced tram and omnibus horse, urban equine stock appears to have unndergone little if any decrease. At any rate in Birmingham, the present stock of horses, subject to the aforementioned limitation, is equal in the aggregate to that at any former period, and in this respect, speaking generally, I think we may fairly assume that Birmingham is approximately typical of other provincial urban centres. The veterinary field, notwithstanding all we hear to the contrary, has evidently undergone very slight if any curtailment, and affords no justification for pessimism. On the contrary when we remember that the agricultural stock of horses and cattle is greater than it has ever been before: that urban horses (save for the displaced tram and omnibus horse) are still practically unreduced; that race horses, hunters and polo ponies do not decrease, and that the list of public appointments in Government, Municipal, Colonial, and Indian services continues to extend, it seems to me, that there is not only no justification for depression or for the pessimistic views frequently expressed, but very good grounds for regarding the outlook as encouraging. Clearly, notwithstanding the advent of motors, there is nothing, so far, within the veterinary horizon to make a man with innate veterinary proclivities turn aside from his natural path in life from fear of the prospect; and though, assuredly, our profession entails on its followers a full measure of life's trials and difficulties, yet for anyone whose natural bent lies therein it has ample compensating rewards in its freedom and life in the open air, in the usually interesting and occasionally fascinating nature of the work, and generally in its being a manly, honest, humane vocation which in some of its aspects provides "the profit of industry with the pleasure of a pastime."

NORTH WALES VETERINARY MEDICAL SOCIETY.

The annual meeting was held at the Mostyn Arms Hotel, Rhyl, on Friday, Sept. 28, at 3 p.m. The following members were present: Mr. R. Jones, President; Dr. Evans, M.R.C.V.S., Bangor; Prof. W. O. Williams, Liverpool; Messrs. F. Booth, Colwyn Bay; R. S. Rowlands, Abergele; L. W. Lloyd, Llangerniew; and T. C. Howatson, St. Asaph, Hon. Sec.

The minutes of the last annual meeting were read and confirmed.

Election of Officers.

President.—Dr. Evans was unanimously elected President for the ensuing year, proposed by Mr. R. Jones, seconded by Mr. F. Booth.

Vice President.—Mr. Howatson proposed, Mr. L. W. Lloyd seconded, that Mr. R. S. Rowlands be elected Vice-president. Carried unanimously.

Secretary and Treasurer.—Mr. Jones proposed, and Mr. Rowlands seconded, that Mr. Howatson be re-elected. Carried unanimously.

Correspondence.

A circular letter was read from the Central Veterinary Society *re* Major Butler's resolution "That the R.C.V.S. be invited to consider the advisability of imposing an annual registration fee."

It was decided that this Society agrees to support Major Butler's resolution.

Specimens.

Prof. Williams demonstrated a new method of diagnosing exostoses of joints by means of the Röntgen Rays, and more especially exostoses which could not be diagnosed by manipulation or any other means, such as occult spavin. The Professor exhibited three specimens of boiled hocks, one which was perfectly sound, another with an occult spavin, and in which the three cuneiformi and the three metatarsi had become anchylosed without any exostoses externally, and in which the ridges of the cuneiform magnum and medium could be distinctly seen and felt, and another hock with a very large exostosis—spavin. Between the two former there would be no tangible or visible difference during life, but both would differ greatly from the third in that respect. The Professor then proceeded to show negatives of the three hocks taken in the living subject by means of Röntgen Rays.

Hock No. 1 showed a distinct narrow space between cuneiform medium and astragalus, another between each cuneiform, and another between the magnum and the head of the metatarsus.

No. 2 appeared to be one bone from astragalus to metatarsus, showing that the articular cartilage between the joints had been absorbed and replaced by exostoses.

No. 3 showed the same with a considerable spavin.

The Professor intimated that he would be very pleased to have hocks from limbs in which there was doubt as to

the seat of the lameness. He advocated the method, especially in cases where a true diagnosis was important, and referred to a case of this nature which was tried in the High Court some months ago.

Thanks were accorded to Prof. Williams in the form of applause.

RETENTION OF THE FŒTAL MEMBRANES IN THE COW.

By T. C. Howatson, M.R.C.V.S.

Mr. President and Gentlemen,—Retention of the fœtal membranes is a condition which may occur in any of the placental mammals after parturition. It, however, occurs more frequently in the cow. Occasionally in the mare, sheep, and sow, and more rarely in the bitch.

The fœtal membranes are the coverings of the fœtus and are situated between the mucous membranes of the uterus and the fœtus. They are attached to the uterus by means of the placenta, which is developed during the period of utero-gestation for the purpose of purifying the fœtal blood, and consists of villi developed on the chorion which fit on to corresponding elevations of the mucous membrane of the uterus, forming a vascular attachment between the two. The arrangement of the chorionic villi varies in different animals.

Causes of Retention.

Abortion, uterine debility, constitutional debility, entanglement, *i.e.*, getting looped on a cotyledon or getting knotted on itself.

Retention in the Cow.

These cases are of almost daily occurrence in a country practice, some of them are by no means pleasant to deal with, on account of the length of time the membranes have been retained and the decomposition which has set in giving rise to a most offensive odour. The placental attachment in this animal is cotyledonary, *i.e.*, the villi are formed in clusters varying in size and number. The most frequent cause of retention is abortion. The fœtus is prematurely expelled and the placental attachments remain firm. It is a prevalent idea amongst farmers that the cleansing should not be removed manually. This idea is now losing ground, and the veterinary surgeon is called in in the course of a few days. When a case of retention after abortion is seen fairly soon—two or three days—the membranes appear fleshy and red, have a slimy œdematous feel, little or no abnormal odour, and are firmly attached to the mammary cotyledons.

When the fœtus is expelled at the normal period and the membranes retained for a day or two we generally perceive, on entering the cowshed, a peculiar offensive odour, the membranes are pale in colour, and a chocolate coloured fluid may be dribbling from the vulva. The membranes have not that fleshy feel which is present after abortion, but are sometimes like a wet wash-leather to the touch, although easily torn or broken by traction. On further manipulation it may be found that there is some entanglement of the membranes on the mammary cotyledons, or they may have formed into a mass as if knotted together, such mass being too large to pass through the partly closed os uteri.

Occasionally it will be found that there is no apparent cause for retention, the membranes simply lying free in the uterus, and only requiring contraction of that organ to expel them. This would be a case of uterine debility.

Constitutional debility is frequently a cause of this disorder, and is seen in old cows and those in low condition, and gives rise to retention by non-contraction of the uterus through want of tone to its muscular coat. Retention may also be due to traumatic causes, such as the presence of uterine and vaginal tumours. In one case I saw the cause was due to the floor of the vagina being torn in such a manner that a band was formed across the canal, part of the membrane had passed under and part over. Removal was accomplished by cutting the torn piece of vaginal wall.

Effect.—The effects of retention of the membrane, whatever the cause may be, are metritis, metroperitonitis, absorption of septic material setting up septic metritis, associated with which we often get septic pneumonia, pyæmia, septic arthritis and septicæmia.

Prognosis.—Favourable when early seen. Unfavourable when complications have arisen.

Treatment.

In treating this disorder, whatever the cause may be, the practitioner must first of all make his hands and arms as near germ proof as possible by the liberal use of antiseptic, not only for his own safety but for the safety of other patients, and the less surgical work he does after removing the membranes from an animal the better. The next thing to be done is to find out the cause of the retention. This is done by washing out the uterus with large quantities of water containing some antiseptic such as Hydrarg Perchlor 1-2000, Jeyes' fluid, Creolin, or Chinosol. This may be done with an ordinary enema syringe, or better with a piece of hose piping five or six feet along with a funnel fitted one end, the free end being passed into the uterus and the antiseptic solution poured down the funnel. The hand should then be introduced into the uterus, and grasping the membranes apply firm but gentle traction. Should the method not suffice to dislodge them, pass the hand into the uterus, and if there are adhesions between fœtal and mammary cotyledons proceed to separate one or two by passing the hand between the membranes and the uterus, and passing the first finger round a cotyledon, bringing firm but gentle pressure to bear on it with the thumb. This will serve to break down the adhesion. When this is done I find it well to withdraw the hand and note whether there is blood or not. If there is blood on the fingers I make no further attempt that day but content myself by again washing out with antiseptics and giving strict orders that this must be carried out at least every four hours, and the following medicine is left—

℞ Fluid ext. Artemesia Vulgaris (P.B. & Co.) ℥ii.
Aqua ad ℥xii.

One third part to be given three times a day in a pound of treacle and a quart of gruel. If the temperature is inclined to rise and appetite poor I combine quinine with the above.

In the majority of cases I find on my next visit the membranes are easily removed, if they have not already come away. Frequently we find the os closed after the second or third day. Attempts should be made to dilate it sufficiently to get the hand into the uterus, failing this a catheter must be introduced and the injections made through it. When the membranes have become putrid it is almost impossible to remove them entirely owing to their decomposed state. Frequent and copious douches are the only means of removing them, and the putrid bits are often accompanied by necrosed mammary cotyledons.

Great emaciation is invariably a sequel to this disorder, weeks and sometimes months of good feeding being necessary to bring the cow into her usual condition. Vegetable and mineral tonics are to be administered, the comfort of the patient seen to, and a liberal supply of quick lime scattered about the floor.

Gentlemen, I have told you nothing new, but I hope you will find food for discussion.

CALVES AND SOME OF THEIR TROUBLES.

By R. S. Rowlands, M.R.C.V.S., Abergele.

Mr. President and Gentlemen,—I believe I am justified this time in not making the usual apologies for the shortcomings to my paper, because I have had to prepare it after a very short notice on account of the regrettable indisposition of the worthy member who had been appointed to write one for this meeting.

If statistics could be had of the calf mortality in Great Britain and Ireland it would be certainly appalling. Assuming the mortality to be from 40 to 50 per cent. exclusive of abortions—which no doubt is only a mild assumption—the loss that it causes the agriculturist must be enormous, and it would be no exaggeration to add that the greater part of this loss may be attributed to the profound ignorance and carelessness of the average calf breeder. The poor construction of calf houses, the filthy surroundings, the careless way of feeding, and the indiscriminate use of drugs—of red, white, and blue drinks and other rubbish—are too well known to all.

It is rather seldom that the advice of the veterinarian is sought when a calf is ailing, especially in some parts of the country; some farmers are afraid of touching his dignity, others are afraid of his fees. But his attendance and medicine for a calf is certainly of a greater pecuniary value to a client than the amount of the ordinary fee—when it is possible to save a calf. If the client could only see that! But before any change for the better will take place breeders must be educated in measures of cleanliness, disinfection, and isolation, or the legislature must make such measures compulsory.

A great number of calves are lost annually through immature birth, especially in the form of contagious abortion, but it is not proposed to deal with that subject in this paper.

In cases of malpresentation of the fœtus at the time of birth, in cows which have gone the full healthy period of gestation, a certain number of otherwise strong healthy calves die of suffocation before birth, labour pains are allowed to go on for several hours unsuspected, and in many unnoticed cases even after the greater amount of the amniotic fluid has escaped, then the placental connection between dam and fœtus becomes more or less completely severed, with the result that the calf dies of suffocation.

It is also a common occurrence in cases where manual interference is necessary in parturition—by amateurs especially, and sometimes by veterinarians—for the umbilical cord to become injured, or twisted round a limb, or compressed in some way; this is sometimes fatal to the fœtus. In cases of breech presentation the great majority of calves are born dead unless very great care be exercised, although signs of life be very apparent before birth. This fatality is caused by the umbilical cord becoming crushed between the sternum of calf and the bony floor of the cow's pelvis, and consequently the calf suffocates. In such cases it is always wise to have sufficient strength ready at hand and as soon as the hind limbs are well secured and the hips have been drawn into the pelvic cavity, to bring the calf away with one determined single pull, and to take it immediately into the open air, dash some cold water, already in store, on it. This generally stimulates respiration. Should this fail artificial respiration should be practised steadily, animation has been known to restore even after 15 minutes of this treatment. A wisp of soft straw dexterously used after respiration is commenced has quite a tonic effect. It is the practice in some parts of the country to let the cow lick the calf; this no doubt helps to restore vigour in the calf, but in order to avoid the danger of infecting the umbilicus it is wiser to abandon that practice.

The disease known as *white scour* is the calf's worst enemy, and probably it clears away a great deal more calves than all the diseases of the domestic animals put together. Up to the year 1901 scarcely anything was known, or at least published, with regard to the etiology of this terrible scourge. Then the late Professor Nocard, at the request of the Irish Department of Agriculture, made investigations into the malady in a part of Ireland where it played havoc at the time. The results of these investigations are splendidly put together by the late Mr. Warwick, of Edinburgh, and may be seen published in *The Veterinary Record* 27th December, 1903, which article is well worthy of perusal.

Prof. Nocard discovered that white scour was primarily a form of septicæmia, due to an ærobic facultative saprophyte, known as "Pasteurella," which is found to exist in great abundance on the walls, floor, and litter in calf and cowsheds where white scour is prevalent. It is found equally abundantly about the external genitals of cows and bulls. As the term *ærobic facultative saprophyte* indicates, "Pasteurella" is a micro-organism that lives on dead organic matter in the presence of oxygen, but is capable of thriving on living tissue in some degree. A calf becomes affected with this germ either at the time of birth or shortly after through the umbilicus. The Pasteurella grows with rapidity on the semi-coagulated blood in the severed umbilical arteries and vein, and generates a toxin which is absorbed into the blood. This toxin seems to paralyse the power of the phagocytes—the natural weapons of defence against the ravages of bacteria—in some cases. The dose of toxin contracted appears to be fatal to the calf in a few hours, and that in the absence of the general symptoms of white scour. However, if the calf survives this primary attack the defensive power of the white cells of the blood is not restored, consequently the calf becomes a prey to a secondary infection from parasites that exist in the alimentary canal and respiratory passages under normal conditions, but inactive on account of the resisting power of the phagocytes. When these parasites—the bacterium coli communis, staphylococci, streptococci, and others get the upper hand, then the well known general symptoms of white scour are made manifest, at any rate from the first 24 hours of life to a fortnight—occasionally a month or even longer.

Prof. Nocard associates some other diseases of calves with "Pasteurellosis" as secondary infections, such as *septic pneumonia*. Sometimes this lung disease exists at the same time as the intestinal trouble of white scour, but commonly it makes its appearance after a calf has survived an attack of the latter. The symptoms are pretty well known to all, and may be noticed even up to six months of calf's age. A whole pen of calves, apparently well fed, may all become simultaneously affected, show signs of agonising pain, and die after two or three days; decomposition seems to set in almost before death. The causal agent of this lung form of the disease appears to be a saprophyte, but different from the one causing the primary infection. Very few calves recover from septic pneumonia, and those that do recover are never of any good.

Septic Arthritis—Joint Evil. An acute suppurative inflammation of the joints, is classed as another sequel to "Pasteurellosis" and may make its appearance after some weeks.

Brain and nerve disorders are also classed as occasional sequelæ to white scour. A calf that is apparently well suddenly becomes frantic, and dies in a few minutes in a convulsive fit, but it may be mentioned here that a fatality of this kind is also attributed to the presence of hair balls in the stomach of the calf. Other nervous symptoms develop more gradually, and the calf seems to lose control of its limbs and its head; it lingers for

days, perhaps weeks, the symptoms become aggravated and finally life becomes exhausted.

The curative treatment of this malady has hitherto been very unsatisfactory. Various medicinal sedatives, astringents, stimulants, tonics, and antiseptics, have been recommended and tried for years, and in recent years Tannoform, Tannalbin, Tannin, and Salicylic acid have been used on the Continent and in this country —with very little success. Personally I find small repeated doses of a mixture containing Ammonia, Carbolic acid, Turpentine, and Glycerine administered in well-boiled wheaten flour gruel, to be as effective as anything. But a curative agent for white scour in calves has still to be discovered. In fact the death of a good many calves is hastened by the indiscriminate administration of unsuitable drugs and quack compounds. And it is really astounding, the stuff some people traditionally believe in as curatives. A well-to-do Cheshire farmer once argued very strongly in favour of balls made of wool and suet and shoved down a calf's throat as an infallible cure for white scour or, for the sake of economy, cotton waste might be substituted for the wool!

The prophylactic treatment of white scour and its associates is the most important: and is without doubt the only means of eradicating this terrible plague. The conditions under which calves are kept in this country are utterly unworthy of a people who claim to be civilised. The ordinary calf-house is generally found to be laid on the northern aspect of some bigger building: most commonly the cow house, with which it generally communicates by a door—the only portal as a rule. The light of day has never had the privilege to enter in since the roof was put on: fresh air is an "extinct species," and drains were never in existence. Calves are most commonly pail-fed unless intended to be fattened for the butcher; it is a common practice, after the first few days of life of the rearing calf, to add some gruel made with various meals, or the so-called milk substitutes, to some of the dam's milk: and later to skimmed milk, or even to separated milk; when this is done it is a very common error to give it to the calf insufficiently cooked, and worse than that to give it too hot—for a hungry calf pays little attention to the temperature of its diet. Another very common error committed when a calf is "off his feed" is to force too much food on it from the bottle, too much food then does more harm than good, and it will only be a fermenting heap in its stomach.

The prophylactic treatment recommended comprises proper and regular disinfection of pregnant cows, and and all cows that calves are likely to come into contact with. Herd bulls also should be subjects of the treatment, especially during the housing season. The internal administration of Carbolic acid to pregnant cows once or twice a week in ½ to ℥j doses has been known to have a beneficial effect: cows take it readily with a bran mash.

Cow houses of bad construction should be reconstructed, allowing plenty of light and space, with good floors, walls, and surface drains in order to facilitate thorough and regular disinfection. Every chink and cranny in the building should have a th rough dressing of limewash containing crude carbolic acid at least three times in the year, the floor and lower parts of the wall should have a daily swill with a disinfectant. There is an objection to Carbolic acid as disinfectant for byres, where milching cows are kept—that the milk acquires its characteristic taste and smell, and the Board of Agriculture recommends a solution of Copper sulphate for swilling floors.

The disgraceful calf house at the back of the building should be abandoned: and a new one should be erected on elevated ground, or on ground that has been elevated at least two feet above the surrounding level, in order to facilitate good surface drainage; it should be some distance from the cowsheds: its four walls should be in the open air, the roof pitched, its door and windows should be on the southern side, and its ventilation openings on the western side, and just below the pitch of the roof: the floor should be of concrete, and made in such a way as to make absorption of fluids impossible. Above all space should be borne in mind. The calf house thus made should be subject to the same disinfecting treatment as the cow house: special attention to be paid to the floor and lower parts of walls each time the manure is cleared out.

A cow should be carefully watched and attended to prior and at the time of parturition as regards disinfection. The calf should be received on clean material, with clean disinfected hands: special treatment of the umbilicus is recommended, a good antiseptic dressing first, followed by a seal of pitch or tar. Personally I do not agree with tying the cord, for the umbilical vein and arteries become distended with blood, which would otherwise dribble out until the flow ceased.

The problem is, how is this great reform to be brought about? On one farm in particular, where white scour and abortion was rampant, these rules have been carried out with the result that contagious abortion has been completely stamped out, and no calf ailment whatever has existed for the last six years.

I have now only to thank you, Mr. President and gentlemen, for your kind attention to one who does not claim to have given you anything original, but simply a repetition.

The discussion was postponed till next meeting, which will be held at Bangor.

T. C. Howatson, *Hon. Sec.*

PHYSICAL SCIENCE AND ITS RELATION TO MEDICINE.

By D. G. Lander, D.Sc., F.C.S.

Presidential Address at the meeting of the Royal Veterinary College Veterinary Medical Association, R.V. Coll. Camden Town, on Friday evening, October 12th.

Before proceeding to the subject of my paper, I should like to thank you most sincerely for the honour you have done me in selecting me as your President. When asked if I should be willing to undertake this office, I at once and very naturally said "No," not at all from natural modesty, but I thought, and still think, that as a chemist I can do very little to directly further the aims of your Association. But counsel prevailed over prudence, and it occurred to me, moreover, that I might indirectly further those aims by laying before you a few notes of some of the important respects in which physical science has influenced and is influencing the art of medicine, veterinary and human.

From the earliest times, chemistry, by providing drugs, particularly salts, has rendered important aid to medicine. The materia medica of ancient Egypt and Greece was kept alive during the Dark Ages by the Arab conjurors of North Africa and Spain, and what little learning Western Europe then possessed it owed to their Spanish universities. But for the most part chemists were very busy then in the search for the "philosopher's stone," which, by transposing the base metals into gold, was to solve the world-old problem of getting rich quickly. Early in the 16th century, Paracelsus started a vigorous compaign against the sordid spirit of alchemy. He regarded the body as a "chemical," and a chemist ought to be a person whose task should be to find a "reagent" which would cure its derangements. Being a man of singular pertinacity and seemingly of large voice—for he is called by the nickname Bombastus—he preached so well that he made chemistry the handmaiden of medicine. Since she so remained for nearly

two hundred years, you will readily admit that a great increase in our knowledge of materia medica resulted.

But all science then was vague and speculative, for it did not rest upon well-tested and accurate theoretical knowledge, and one must come to comparatively recent times to find true advance in the physical sciences and along with them in medicine. Time is inadequate for even an enumeration of the ways in which physical science has since influenced the medical art, and I must be content to ask your attention to a few points only. Take for instance the studies of optics and electricity. What would be the condition of histology and pathology without the microscope? We must remember the influence of electricity on the study of the nervous system, and we all know the services of the X ray in surgery as well as the extraordinary therapeutic effects of those rays, and their radio-active emanations. We know how X rays most painfully affect the operator, and we know too of the efficacy of the Finsen light in lupus.

A very early support to legal medicine was given when chemists elaborated a systematic chemical toxicology. I think I may say that it is now impossible for anyone to poison for gain or malice and to escape detection by the analyst. One realises the advance best by endeavouring to picture the state of affairs when such acts were possible. The Egyptian priests were well acquainted with prussic acid, which they got from peaches and used for the removal of objectionables with great convenience and impunity to themselves. In mediæval Europe poisoners and potion compounders in general drove a very safe trade. Much romance clings around such celebrated experts as the Borgias, but the Italians used mainly arsenic, although they knew of belladonna, nux vomica, mezereum and yew. Their impudence was astonishing; recipes for poisoning were insinuated into Latin text books of cookery! We read of one person, who presented to the Council of Ten at Venice a regular tariff for the poisoning of the great at varying prices depending on the degree of eminence, and distance to be travelled. He got commissions, but no attention seems to have been paid to the possibility of his being found out and scotched by the law. In another place we read of a lady practitioner who tested the strength of her preparations on the hapless patients in a hospital. Now we have changed all that.

For materia medica modern organic chemistry has produced many useful purely artificial drugs. I need only mention such substances as antipyrin, salol, urethane, antifibrin, phenacetin and sulphonal to emphasise this point. Most of the new drugs are so-called coal tar products, that is, are prepared from benzine, naphthalene, carbolic acid and so on. The dyes of similar origin are not only of ornamental value, but are indispensable as stains to the physiologist and pathologist.

There is no limit to the possibility of producing new compounds by the methods of synthetical research, and the physiological action of them can always be tested. But there is very little, practically nothing, known of the relation between chemical composition to physiological effect. In the vast majority of cases we know nothing of the reason why a compound should have the effects it actually does. To illustrate my meaning, there is absolutely nothing in the general chemical relationships of lead and arsenic to lead us to anticipate their toxic action.

The hypnotic sulphonal is a member of a fairly numerous class of compounds, It contains what chemists call "methyl" and "ethyl" groups; two of each. The compound containing instead four methyl groups has entirely similar physical and chemical properties, but is physiogically inactive.

We can understand of course the action of corrosive poisons in causing destruction of the tissues; we can see some reason for the poisonous nature of carbon monoxide since the gas forms a stable compound with the hæmoglobin of blood to the exclusion of oxygen, and we know that ammonia and the fixed alkalies disintegrate the red corpuscles, but we cannot see why a small dose of an alkaloid should produce relatively great nervous disturbance, why strychnine should prove convulsive, morphine hypnotic, why physostigmine should contract and atropine dilate the pupil of the eye. Truly we know what centres are acted upon, but we do not know what chemical reactions in the living cells determine that action.

The more workers can devote their skill and time to the minute study of such problems, the more light will be thrown on them.

I am inclined to think that no single person in the history of chemical science has ever influenced medicine to such an amazing degree as did Pasteur, and largely as the result of what most people would have regarded as a piece of ill-luck. Whilst working on the chemistry of tartaric acid, Pasteur once found a solution spoilt, in fact it was fermenting under the influence of a penicillium. Instead of throwing it away, Pasteur examined it to see whether any effect had been produced upon the acid. I might mention in passing, at the time he was studying the formation of those varieties of tartaric acid whose solutions rotate the plane of polarisation of light, and found as a matter of fact that the fermentation had actually produced one of those forms. Thereby he placed a useful method of research in the hands of chemists, and himself acquired an interesting fermentation, which later received new stimulus when he turned his attentions to the beer manufacture in France after the Franco-Prussian war, in the patriotic endeavour to raise that industry in his native land to the degree of German excellence. It was he who first definitely proved that there is no fermentation without an organism; and that for every particular fermentation there is a particular organism, against Liebig's view that fermentative change is a post-mortem decomposition of the organism.

He first described anærobic bacterial life; he was the discoverer of the streptococcus of puerperal fever, and told the surgeons how they carried it on their hands from patient to patient; he was the father in theory of antiseptic surgery; and he was the first to achieve protective inoculation which he did for anthrax and rabies—since Jenner, from whom he differed in the logical sequence of his step, and in so far as his antitoxin was developed not in an animal, but in a glass jar. He is well remembered through Pasteurisation, or food-preservation by heat sterilization, as against the use of chemicals which if not poisonous may at least, when we swallow them in small doeses with every meal we eat, cause dyspepsia; and the whole world not alone of science and medicine may rejoice that his name and the inspiration of his genius are kept alive in the Pasteur Institute in France.

Now all bacterial activity is fermentative. Let me take yeast sugar fermentation as known to chemists and, with your indulgence, attempt to depict it in medical fashion, or perhaps I ought to say in a quasi-medical fashion. The yeast cell is the invading bacterium, inimical to the life of the sugar, which he attacks and destroys for the purpose of his own growth and reproduction. In accordance with a general law an antitoxin appears, namely, alcohol, which when it attains about 12 per cent. strength, kills the bacterial invader, giving us the attenuated virus of the yeast poison. Such an attenuated virus was that found by Pasteur in his cultures of fowl cholera, dead or nearly all dead on his return from a short holiday. We can immunise sugar against yeast disease by inoculation with alcohol.

What is the toxin? Very nearly ten years ago Buchner in Germany broke down the cell walls of yeast by rubbing with fine sand and with a filter press squeezed out the clear cell sap, perfectly free from organisms, yet

still capable of fermenting sugar; the active principle of this sap he calls xymas.

Next the cell sap is "diaysed," i.e., it is placed in a parchment drum floated on pure water. Only simple and for the most part crystalline substances which we call "crystalloids" can pass through the membrane into the water, whilst gluelike or "colloid" bodies such as proteids or albumins cannot pass through, but remain in the parchment drum At the end of the process the yeast cell sap is found to have been thus divided into two parts, neither alone can ferment sugar, mixed together they can. What remains in the drum is the proteid unorganised ferment or enzyme of yeast (the xymase), what passes through has been found to be chiefly mineral salts, notably phosphates. The xymase is the ferment which can lay hold of, or, to use Fischer's analogy, is the key which can unlock the sugar molecule to alcohol and carbonic acid, but only with the assistance of the co-ferment—the diffusible mineral salts.

When a pathogenic organism invades the blood, is not the mode of attack very like that of the yeast on sugar? The organism operates by means of the enzyme which attacks the cell constituents of the body, itself producing the antitoxin, just as xymase produces alcohol, and this antitoxin may prevail ensuring recovery, acquired and communicable immunity. The leucocytes may destroy the bacteria, especially if they are rendered palatable by the presence of those sauces which, under the name of opsonins must be well known, since the daily press talks of them. Are the opsonins in any way comparable with the co-ferment of yeast xymase?

Further, enzymes are catalytic agents, that is they can in theory break down an indefinite quantity of the substance acted on without themselves suffering change. May not this account for the potency of a small dose of toxin or antitoxin, and its permanence in the system?

I venture to draw these crude parallels in the hope of eliciting your criticism, the sharper the better, for I personally stand in great need of more light on this most fascinating topic.

Apart from my own slender knowledge of the detailed work, it would take too long too dwell on that most interesting and important subject—the chemistry of the nitrogenous proteids of the animal and plant organism, and those marvellous processes of vital chemistry whereby the foodstuff eaten is resolved, probably to very simple forms, re-elaborated to those proteids particular to the body, employed, and again degenerated, and finally excreted as waste, without the use of a test tube or Bunsen burner. One feels that pure chemistry has done little towards the solution of the question of the constitution of the proteids. Of late years to be sure organic chemistry has advanced a little in the hands of Fischer, who had previously cleared up the chemistry of the physiologically important sugars and uric acid compounds. He has now succeeded in preparing from their elements bodies having the properties of peptones which we recognise among the more simple products of the digestion of albumen.

No doubt the zealous co-operation of chemist and physiologist will go far to extend this line of enquiry, but what has been done is insignificant when compared with what is to be done, and I do not think I should go very far wrong if I were to make the apparently rash and bold assertion that when we once do know in correct and full detail the chemistry of albumin we shall be masters of disease.

I have already had occasion to refer to the process of dialysis through a parchment film. In a living protoplasmic cell, the cell wall represents such a film, but the living film is impermeable to colloids and also to salts, or may be permeable only to particular salts, or even particular constituents of one and the same salt. For example, a living cell wall may be impermeable to sodium chloride; another living cell wall may be impermeable to sodium, but permeable to chlorine, that is to say permeable to one constituent and impermeable to the other one. The cell content consists of the suspension of colloidal proteid in a salt solution, and all salt solutions exert a pressure dependent on their strengths and which physicists call the osmotic pressure. This pressure is not manifested in a drop of, say, sodium chloride solution, because it is very small compared with the force of surface tension which holds the drop together. But abolish the liquid surface; for example, place one drop of salt solution contained in a living cell into pure water. Then the existence of pressure is indicated by an inrush of water, which will be enough to burst the cell wall. Let us, to fix ideas, imagine a red blood corpuscle. In blood plasma it floats in a solution of about 1 per cent. of salt, a strength equal to that of the salt solution contained in the corpuscle. Therefore it remains as we know it. Put it into a stronger salt solution—water leaves it and it shrinks up. Put it into pure water—water enters and it bursts. This has a very direct practical bearing. When you make good an extensive loss of blood by injecting water into the veins you use a 1 per cent. salt solution. If you used distilled water you would cause rupture of the red corpuscles and possibly death. Similarly one fills one's stomach with pure water, such as is obtained from melted ice or snow. It enters the epithelial cells profusely and may cause them to swell up so that they burst or die, and induce gastric catarrh of the stomach. As a matter of fact distilled water is a mechanical poison.

One more instance of this process of osmosis as it is called. Traditional practice unite in prescribing a dose of Epsom salt for most of the minor ills to which all flesh is heir. You know the wise epitaph in a country churchyard,

> "Here lies I, and my three daughters,
> We died from drinking Cheltenham waters.
> Oh if we'd stuck to Epsom salts,
> We should'nt have been in these 'ere vaults."

The salt is not specifically active. It forms a strong solution in the bowel. Water consequently enters abundantly from the weaker solutions on the other side of the intestinal lining and the desired effect is accelerated.

Now, gentlemen, I feel I owe you some apology for the brevity and scrappy nature of my notes, and my trial of your patience, but particularly for a little bit of shop which I really ought to keep for the other side of the quadrangle. I will confess to having had in the back of my mind a hope that I might stand before you as an apologist for those preliminary medical studies which, I fear, many of my junior auditors must regard as a nuisance and a delay in obtaining the practical knowledge of a veterinary surgeon. I have spoken of ferments and drawn some analogies. Allow me just one more. Theory is the ferment of practice. If we do not leaven our practice with theory when we have the chance, that practice will never attain its greatest possible efficiency. I know quite well that an ounce of practice is worth a pound of theory, but all of us have, I trust, many years of practice of our arts before us, and a very few years I can assure you will suffice to turn the the loftiest theorist into an out-and-out practitioner.

I hope, too, that this Association will succesfully continue its part in the educational and social work of our college. I know of no better means of study than the free, but careful, discussion of one's difficulties with one's friends.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*:

WAR OFFICE, PALL MALL: Oct. 16.

Captain Frederick U. Carr, from the Seconded List, to be Captain. Dated 17th October, 1906.

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Oct. 13		24	28			27	36			13	43	230
Corresponding week in	1905 ..	16	18			21	32			8	9	23
	1904 ..	22	30			18	32			8	13	53
	1903 ..	10	17			17	42			17	21	135
Total for 41 weeks, 1906		721	1028			874	1620			323	907	5114
Corresponding period in	1905 ..	775	1072			980	1689			687	658	2944
	1904 ..	791	1230			1240	2195			1102	1060	4927
	1903 ..	604	911			1188	2015			1227	1222	6417
IRELAND. Week ended Oct. 6		..	..	..	..	..	..	..	..	2	2	2
Corresponding Week in	1905 ..	..	..	..	..	1	5	..	..	1	..	3
	1904 ..	..	..	..	..	..	..	..	..	..	2	36
	1903 ..	..	..	..	..	..	..	..	..	3	2	36
Total for 40 weeks, 1906		3	7	..	..	6	14	..	..	174	83	916
Corresponding period in	1905 ..	3	5	..	..	19	60	..	..	239	134	1401
	1904 ..	3	3	..	..	9	30	..	..	378	282	3743
	1903 ..	2	3	..	..	2	3	2	..	411	260	3173

Board of Agriculture and Fisheries, Oct. 16. 1906.

Epizootic Lymphangitis: Week ending Jan. 27, 1906, 1 case.

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 11, 1906.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Tuberculous Fowls.

Tuberculosis among fowls is rampant in several poultry yards in Somersetshire, and the county agricultural committee has decided to make experiments with a view to stamping out the disease.

The county instructor in poultry-keeping says that he has seen more of this disease in Somersetshire than elsewhere, and he believes that it could be transmitted from fowls to other stock such as horses.—*Meat Trades' Journal.*

Disease Spread by a Chicken.

A strange case in which the spread of fever at a village school was traced to the agency of a chicken was reported by Dr. A. K. Robinson, the East Kent Medical Officer, to the Elham Board of Guardians.

A recurrence of fever having taken place at the school, Dr. Robinson investigated the matter, and found on the premises some chickens which had diptheritic throats. The germs were conveyed from the chickens to the children through the medium of the playground dust.

Dr. Robinson also mentioned an instance where a cat having slept in the nest of some diseased chickens, contracted the disease, and communicated it to a child.

Personal.

JOHNSON. On October 17th, at Devereux House, Twickenham, Middlesex, the wife of Alexander A. Johnson, F.R.C.V.S., of a daughter.

CORRESPONDENCE.

THE COUNCIL AND THE PROFESSION.

Sir,

Apart from the regretted resignation of the Secretary, there are several items in the report of the recent Council meeting which are of distinct interest and importance—some of which we have not yet heard the last of. Now that veterinary societies, in addition to using their social influence to return their nominees to the Council Chamber, are beginning to take some real interest in the work that is done there, it may be worth while to call attention to some of these points.

Two of them are connected with the Registration Committee, and much the most important of these is the case of the registered practitioner who has successfully appealed to the Privy Council. More will be heard of this, as the subject has been again referred to a Sub-committee, and as very little official information has been given concerning the case, comment just now is rather premature. But if it is correct that this registered practitioner has defeated the Council on the question of jurisdiction *alone*, the only possible remedy lies in applying for a new Act of Parliament, extending the disciplinary powers of the R.C.V.S. to *registered men*. Such a supplementary Act was granted us a few years ago in order to give the Counril control over the holders of the Highland and Agricultural Society's certificate. There is, I think, little doubt that a similar one could be obtained to include registered men also, and the Council may think it worth while to apply for it. But if they do, the new Act need not be confined to that one point!—here is room both for nebulous speculation and serious thinking.

I do not propose to dwell upon the case of drunkenness, though I think that much might be said both for and

against the decision of the Council. But it is with great surprise that I note the statement of a member of Council that "The law does not inflict a penalty for being intoxicated (!!!)" And perhaps I may be permitted to point out that—unless the reporter erred—the Council were not quite correctly informed as to the proportion of votes necessary to remove a name from the Register.

Now we turn to the work of Parliamentary Committee, whose report the members of Council sanctioned by adopting. By so doing they very rightly tabooed three ill-considered suggestions emanating from a veterinary society, but I am sorry they included the fourth (or first on the list) which really would have been a useful and quite unobjectionable little innovation.

Finally we come to the decision *re* the proposed annual registration fee, which is important, especially in view of the possibility of a new Act being applied for for other purposes.

The Councilmen have shelved this proposal for the present, on the quite reasonable ground of lack of evidence as to whether the profession is sufficiently unanimous in desiring a measure which would certainly require a new Act of Parliament for its fulfiment.

This is a commendable attitude on the part of our legislators, whose real duty, under our Charters, is to carry out the wishes of the profession, and it remains to be seen whether the members of the profession will make any serious attempt to exercise their undoubted right of decision as to whether Major Butler's proposal shall pass beyond the initial stage or not. Such discussion as has already taken place regarding it has been rather vague, and many men whose opinions would carry weight have, so far, exercised a cautious reticence upon it. Yet it is an excellent idea—if it could be put into practice. Here is an opportunity for some essayist before a veterinary society to consider the project, sum up the arguments for and against it, and awaken a thorough discussion of the subject in all its bearings. Should that happen—whatever the fate of this particular proposal might be—the Council's action would probably have a beneficial effect in stimulating the profession to an increased interest in matters political.—Yours truly,

"C."

PUBLIC HEALTH CONGRESSES.

Sir,

From time to time, in the reports of veterinary delegates to Congresses on Public Health, I have noticed complaints of the poor attendances at the sectional meetings, but I have never seen any criticism half so vigorous as that with which Prof. Craig concludes his report of the meetings of the Royal Institute of Public Health, which appears in your recent issue. I should like to see this matter discussed thoroughly. Prof. Craig raised, for the consideration of his own Society, a point which has often been the subject of debate in other veterinary Associations, viz., the advisability or otherwise of sending delegates to these Congresses, and it is very possible that his remarks may be used as an argument by men who see no use in doing so. But assuming that Prof. Craig's view of the condition of things at one at least of these gatherings is correct—I think he is wrong in suggesting that the veterinary profession should cold shoulder the particular Congress he refers to. It would be better, in the first place, to see if some improvement cannot be effected.

Prof. Craig's complaint regarding this one Congress is chiefly that the social element has so far superseded the scientific that the gathering "has degenerated into something little better than a social function."

In the sentence succeeding the one I have partially quoted he makes the strong statement that "As a medium for the dissemination of knowledge connected with public health it is hardly worthy of its name." The cause he gives is that such functions as garden parties and excursions *in connection with the Congress* were held *at the same time as* its sectional meetings. He also hints that these temptations were heightened by the baneful influence of a sex, the majority of whose members may certainly, in my judgment, be relied upon to substitute frivolity for intellectual advancement if they can. But would it not be possible to secure that no gaieties or sightseeing in connection with the Congress should take place at times which clashed with those of its meetings for serious work? Such an alteration might be effectual if representations were made to the management, but it will *not* be effected if men who desire to use these gatherings for earnest deliberation forsake them to those who regard them chiefly as an opportunity for social diversion.

I have never been to any of these Congresses, so have assumed that Prof. Craig's view of the state of things at one of them is correct. But I should like to know what other delegates to Cork have to say in the matter—and it is perhaps permissible to enquire whether any delegate to Bristol has a similar complaint to make. Perhaps now that the point has been raised by one delegate, it will be alluded to by others when reporting to the associations they have represented.—Yours faithfully,

"Socrates."

CROSS-EXAMINATION BY R.S.P.C.A. INSPECTORS.

Sir,

The constant harping upon this real or imaginary grievance is becoming rather irksome, but are not the utterances of Mr. J. K. Gooch at the recent meeting of the Eastern Counties V.M.S. somewhat ill-advised? He appears to have suggested that we should "fight out whether it is legal for an R.S.P.C.A. inspector to cross-examine a veterinary surgeon on expert evidence." How the fighting is to be done he does not indicate, but it seems to me that the result of such speeches may be to induce some hot-headed member of the profession to render himself liable to penalties for contempt of court.

Have any of those gentlemen who so keenly resent being cross-examined by an inspector ever taken the simple step of obtaining legal advice on the point? If so, it would be interesting to hear what that advice has been.—Yours faithfully,

"Practitioner."

SALE OF VACCINE TO FARMERS.

Sir,

I would like to ask through your valuable paper if anything can be done to stop and if anyone else has suffered in the same way. Tipper and Co., Birmingham, have sent a man named Bridgwater to show farmers how to vaccinate calves and *supply* vaccine and needles. The needle and case at 2/6, 10 doses at 7/-. I thought that Huish as sole agent didn't supply only to the profession; I take it that Mr. Tipper belongs to the firm and should not be supplied with the vaccine. Anyway this young man, Bridgwater, called upon me and asked if I was going to vaccinate a certain farmer's calves. I said. "I expect so; I always have done, and he has asked me to do so again." He replied, "Oh that's all I wanted to know. We are going to take an action against him and might have settled it another way."

I really think that some way should be found to stop this man. I should be much obliged to you if you will insert this in your next issue and would like to hear if anyone else has had to put up with similar treatment.—Yours truly,

T. J. Foulkes.

Bromyard, Oct. 13.

Surgical Anatomy, by Jno. T. Share-Jones, M.R.C.V.S. Demy 4to, cloth, lettered, Pt. I., 160 pp., 7 coloured plates, 26 half-tone plates; no advts: Williams and Norgate, 14 Henrietta Street, London, W.C.

Tuberculosis, its Origin and Extinction, by W. Pickett Turner, M.D. Cr. 8vo., 96 pp., cloth, lettered, 25 illustrations; no advts: 2/6 net. Adam & Charles Black, Soho Square, London.

Communications and Papers received.—Messrs. W. W. Gulliford, J. E. Baxter, John Toms, T. C. Howatson. *The Daily Telegraph, Western Morning News, Lincolnshire, Boston and Spalding Free Press.* [Oct. 13.

Capt. C. E. Steel, Messrs. L. M. DaCosta, F. T. Maller, T. C. Howatson, A. J. Todd, T. J. Foulkes, E. W. Hoare, T. B. Goodall.

Sussex Daily News, The Sunday Times (Perth, W.A.) [Oct. 20.